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REMARKS

Claims 1 to 30 are now pending in the application. Claims 1, 2, 5, 8, 12, 14, 18, 20 to 24, 26, and 27 are amended. Claims 7 and 25 are cancelled. Claims 28 to 30 are withdrawn. Support for the amendments is found in the specification as originally filed, for example at Paragraphs [0014] and [0022]. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

SPECIFICATION

The specification stands objected to for certain informalities. Applicant has amended the specification according to the suggestions in the Office Action. For example, the Examiner's attention is drawn to the use of descriptive terminology in conjunction with the capitalized trademarks "NOMEX" and "BASOFIL" at Paragraph [0004]. Applicant submits technical data showing the correspondence between the descriptive terminology and the brand names used in the application as filed. Also, the reference number inconsistency at Paragraph [0014] regarding the term "lay-in stitch lap" is corrected. Therefore, reconsideration and withdrawal of this objection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 112

Claims 2 to 3, 5, 8, 12, 14, 21 to 23, and 25 to 26 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

The Office Action states that the trade names NOMEX®, BASOFIL®, and TEFLON® cannot be properly used to identify any particular material in the claims. Applicant respectfully draws Examiner's attention to amended Claims 2, 5, 8, 12, and 21 to 23. These claims, as presently amended, recite generic chemical names for materials previously identified by trade names.

The Examiner further avers that Claim 14 is vague and indefinite due to the limitation reciting "third yarns," and that the Claim 25 limitation of "second polyester textured multifilament yarns" lacks antecedent basis because there isn't a "first polyester textured multifilament yarn." It is respectfully submitted that amended Claims 14 and 25 merely claim yarns in addition to the yarns of the independent claims. The amended claims are therefore not vague, indefinite, or lacking in antecedent basis.

With regard to amended Claims 14 and 26, the Office Action asserts that the structure of the yarn described is unclear. As disclosed in the specification at Paragraph [0022] and at Table 1, "polyester over polyethylene terephthalate monofilament yarn," or "PE over PET," is yarn having a polyethylene terephalate core with a polyester covering. Claims 14 and 26, as presently amended, clarify the yarn structure as such. Accordingly, Applicant respectfully requests the rejection under § 112, second paragraph, be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-2 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ford et al (U.S. Pat. No. 5,556,495) in view of Schnegg (U.S. Pat. No. 5,191,777). These rejections are respectfully traversed.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Applicant respectfully submits that there is no suggestion or motivation to substitute a weft inserted warp knit as described in Schnegg for the woven fabric of Ford. The incentive behind the invention of Schnegg is to make a knitted fabric which has a look and feel similar to woven fabrics. (Col. 1, lines 13-20). There is no motivation to shape such a knitted fabric into the configuration disclosed in Ford, where the subjective comparison to conventionally woven fabrics is not relevant.

Additionally, the teachings of the references conflict, as Ford expressly prefers fabric with spirally set filaments. Ford states that "tubular products comprising fabrics and preferably woven fabrics having such spirally set filaments generally possess excellent flexibility and exceptional kink and abrasion resistance." (Col. 2, lines 42-51). Due to the suggestive power of the Ford reference, asserting the superior nature of the spiral configuration, it would not have been obvious to one having ordinary skill in the art to substitute the weft inserted, warp knit of Schnegg. Accordingly, a prima facie case for obviousness fails due to the lack of suggestion or motivation to combine the Ford and Schnegg references.

Furthermore, it is respectfully suggested that the combined prior art reference of Ford and Schnegg do not teach or suggest all of the limitations of the amended claims.

Examiner's attention is directed to amended Claim 1, which recites a "set of knitted warps including a plurality of textured second multifilament yarns." As stated by the Examiner in the Office Action, Ford and Schnegg fail to teach multifilament yarns that are textured. For at least this further reason, amended Claim 1 and all claims dependent thereon are patentable over the combined Ford and Schnegg references.

Applicant believes that a prima facie case for obviousness with regard to the amended claims is not presented in the Office Action. Any prima face case arguably presented is further rebutted because the Ford reference teaches away from the claimed invention in a material respect. Specifically, Applicant respectfully submits that Ford teaches away from the use of fabrics other than those using wall portions with filaments resiliently set in a spiral configuration. "According to important aspects of the invention, the shaped fabric products include a wall portion comprising a filament resiliently *set in a spiral configuration* with respect to the longitudinal axis of the shaped product." (Col. 2, lines 42-46, emphasis added). This fabric configuration is a material aspect of the invention claimed by Ford. Consequently, the present claims are patentable, and the § 103 rejection based on Ford and Schnegg should be withdrawn.

With regard to the textured yarn limitation, Claims 4, 5, 7, 8, 11, and 12 stand rejected as being unpatentable over Ford in view of Schnegg, and further in view of Woodall (U.S. Pat. No. 3,882,857). As stated above, there is no suggestion or motivation present to combine the teachings of Ford and Schnegg. Even more so, there is no suggestion or motivation to combine the teachings of Ford and Schnegg with those of Woodall. Woodall is directed to an *air permeable orthopedic cast*, and not to protective coverings for cables, conduits, wiring and the like. Applicant respectfully

submits that one of ordinary skill in the art would not have been motivated to draw upon orthopedic cast teachings to modify protective cable coverings. Accordingly, the rejections of the amended claims are improper and should be withdrawn.

Concerning the Nylon 6/6 yarn limitation, Claims 6, 9, 13, and 16 to 18 stand rejected as being unpatentable over Ford in view of Schnegg and Woodall, and further in view of Boyd et al (U.S. Pub. No. 2005/0017402 A1). Applicant respectfully suggests that these claims are patentable as they limit the knitted warps to a plurality of textured nylon multifilament yarns. As stated with respect to amended Claim 1, there is no suggestion or motivation to combine the Woodall reference, which teaches the use of textured yarn in orthopedic casts, with the cable coverings of the Ford reference. Consequently, the rejection of independent Claim 16 should be withdrawn.

Claims 24 and 26 to 27 stand rejected as being unpatentable over Ford in view of Schnegg, Boyd, and Bettcher et al (U.S. Pat. No. 5,070,540). Also, Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ford in view of Schnegg, Boyd, Bettcher, and Woodall. The Examiner's attention is respectfully directed to amended Claim 24. This claim recites an additional set of placed warps including a plurality of textured multifilament yarns. As such, Claims 24 and 26 to 27 are non-obvious. Furthermore, there is no suggestion or motivation to combine the orthopedic cast teachings of Woodall with other cited references. Accordingly, Applicant traverses the rejection as the prima facie case for obviousness fails with respect to Claim 25.

Finally, the remaining claims cited in the Office Action as rejected under 35 U.S.C. § 103(a) are also traversed. Claims 3 and 14 stand rejected as being unpatentable over Ford and Schnegg in further view of Boyd. Claim 15 stands rejected

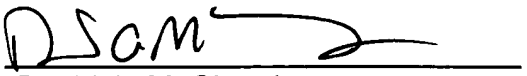
as being unpatentable over Ford and Schnegg, and further in view of Keogh (U.S. Pub. No. 2002/0098357 A1). Claims 19 to 20 stand rejected as being unpatentable over Ford in view of Schnegg, Woodall, Keogh, and Stanhope et al (U.S. Pat. No. 5,556,495). Claims 21 to 23 stand rejected as being unpatentable over Ford in view of Schnegg, Woodall, Boyd, Keogh, and Stanhope. Applicant respectfully notes that Ford and Schnegg do not teach the textured knitted warp limitation and that there is no suggestion or motivation to combine the orthopedic cast teachings of Woodall with any of the other references. Accordingly, the remaining rejections under § 103(a) are rendered moot and should be withdrawn as improper.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: January 18, 2006

By: 

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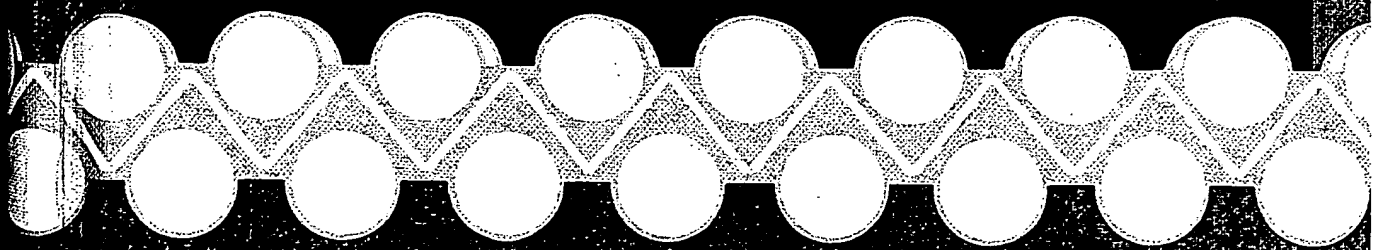

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POLYTETRAFLUOROETHYLENE, HOMOPOLYMER OF TETRAFLUOROETHYLENE

Polytetrafluoroethylene (PTFE) has a unique position in the plastics industry due to its chemical inertness, heat resistance, excellent electrical insulation properties, and the low coefficient of friction in a wide temperature range. Polymerization of tetrafluoroethylene (TFE) monomer gives this perfluorinated straight-chain high polymer with the formula $-(CF_2-CF_2)_n-$. The white to translucent solid polymer has an extremely high molecular weight, in the 10^6–10^7 range, and consequently has a viscosity of about 10 GPa·s (10^{10}–10^{12}P) at 380°C. It is a highly crystalline polymer and has a crystalline melting point. Its high thermal stability is due to the strong carbon–fluorine bond and characterizes PTFE as a very useful high temperature polymer.

The discovery of PTFE by Plunkett (1) in 1938 opened the commercial field of perfluoropolymers. Initial production of PTFE was directed toward the World War II effort and commercial production was delayed by DuPont until 1947. Commercial PTFE is manufactured by two different polymerization techniques that result in two different types of chemically identical polymer. Suspension polymerization produces a granular resin, and emulsion polymerization, the coagulated dispersion that is often referred to as a fine-powder or PTFE dispersion.

Because of its chemical inertness and high molecular weight, PTFE does not flow and cannot be fabricated by conventional techniques. Therefore, an extensive processing technology had to be developed.

The suspension-polymerized PTFE polymer (referred to as granular PTFE) is usually fabricated by modified powder metallurgy techniques. Emulsion-polymerized PTFE behaves entirely differently from granular PTFE. Coagulated dispersions are processed by a cold extrusion process (like lead). Stabilized PTFE dispersions, made by emulsion polymerization, are usually processed according to latex processing techniques.

Manufacturers of PTFE include Daikin Kogyo (Polyflon), DuPont (Teflon), Hoechst (Hostaflon), ICI (Fluon), Ausimont (Algoflon and Halon), and the USSR (Fluoroplast). The People's Republic of China also manufactures some PTFE products.

Monomer

Preparation. The manufacture of tetrafluoroethylene involves the following steps:

Basofil®
heat & flame resistant fiber

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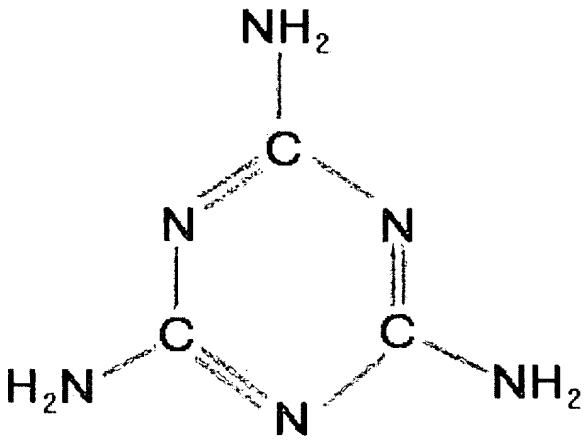
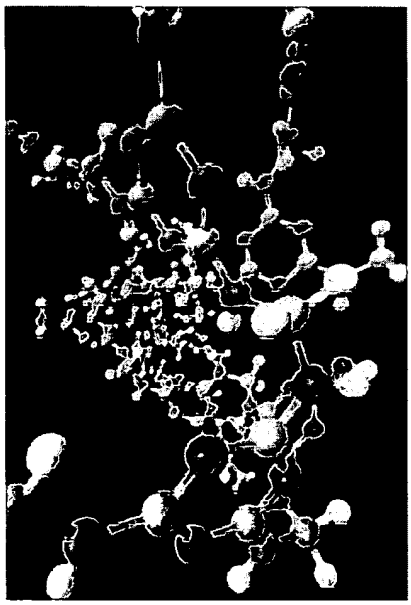


A glance at two and three dimensional representations of the Basofil fiber chemical network structure.



Chemistry

Basofil® heat and flame resistant fiber is based on patented melamine technology.

Although melamine is considered unreactive, its symmetry and functionality make it suitable for use as a building block in condensation synthesis reactions with formaldehyde. Initially in condensation reaction, methylol compounds are formed, which then react with one another to form a three-dimensional structure of methylene ether and methylene bridges.

The resulting network structure gives Basofil fiber the same characteristics typical of other melamine based materials: heat stability, low flammability, high wear performance and solvent resistance. In addition, Basofil fiber meets all known environmental regulations with regard to processing and use.

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NOMEX®
only by DuPont

H-52720 Revised July, 2001 (Replaces H-52703 April, 1999)

Technical Guide for NOMEX® Brand Fiber

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NOMEX® E89™, Z-200™, Active Flame Protection™, and Filter Advisor™ are trademarks of E.I. du Pont de Nemours and Company.

What Is NOMEX®?

NOMEX® is a DuPont registered trademark for its family of aromatic polyamide (aramid) fibers. This family consists of staple fibers, continuous filament yarns, paper, and spunlaced fabrics. Uses for staple, yarn, and spunlaced products include apparel fabrics to protect against flash fire and electric arc exposure; firefighter garments; fabrics and spun yarns for filtration applications; insulation in fire resistant thermal protective apparel; rubber reinforcement; and in transportation textiles such as aircraft carpeting. Some uses for the paper products include insulation in electric motors and transformers, wire wrapping, and honeycombed strength members in many aircraft. This technical guide focuses on products and end uses for the staple and yarn products. Information on other applications may be obtained from the Advanced Fibers Systems Customer Inquiry Center.

Unlike flame-retardant treated (FRT) materials, NOMEX® brand fibers are inherently flame resistant(FR): the flame resistance is an inherent property of the polymer chemistry. It will not diminish during the life of the fiber. The fiber's low stiffness and high elongation give it textile-like characteristics which allow processing on conventional textile equipment. These and other properties are discussed in detail in this guide.

In this guide FR will designate materials that are ***inherently*** flame-resistant, such as NOMEX® and KEVLAR®. FRT will designate materials that have been ***treated*** with a flame-retardant chemical to make them flame resistant, such as FRT cotton.

Since its introduction, the product lines of NOMEX® have been augmented to include a variety of natural and colored fibers and blends, each with unique properties designed to meet specific end-use requirements. The general classes of these products are discussed in the following section. Table I-1 on page 4 lists some specific commercial products and their end uses.

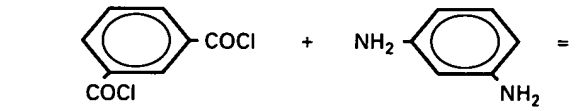
Development and Molecular Structure of NOMEX® Brand Fiber

NOMEX® was developed by a DuPont research team seeking a fiber which would add thermal resistance to the physical properties of nylon. This research, begun in the late 1950's, led to subsequent laboratory production and extensive evaluation of a fiber originally called HT-1. Adoption of the trademark NOMEX® nylon was announced in 1963, when pilot plant facilities commenced operation. By 1967, NOMEX® was available commercially. In 1972 the tradename NOMEX® aramid was adopted.

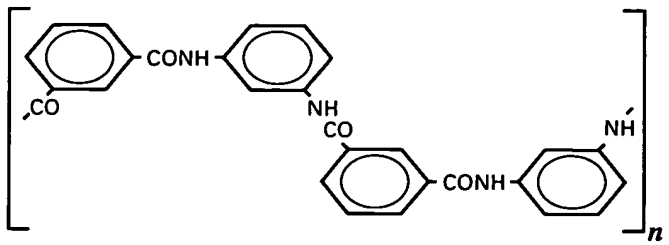
NOMEX® meta-aramid, poly(meta-phenyleneisophthalamide), is prepared from meta-phenylenediamine and isophthaloyl chloride in an amide solvent. It is a long chain polyamide in which at least 85% of the amide linkages are attached directly to two aromatic rings. The meta oriented phenylene forms bends in the polymer chain, reducing chain rigidity as compared to the para orientation in the chemically similar KEVLAR® para-aramid chain. This flexible polymer chain gives NOMEX® more textile-like qualities while retaining high temperature properties similar to KEVLAR®.

The aromatic rings and the conjugated amide bonds that link them together are particularly strong and resistant to chemical attack. They also provide a high degree of heat resistance to the polymer backbone. As a result, NOMEX® does not melt and drip, and merely chars when exposed to high temperatures for prolonged periods.

Figure 1.1 NOMEX® Meta-aramid Synthesis



isophthaloyl chloride meta-phenylenediamine



NOMEX® meta-aramid [poly(meta-phenyleneisophthalamide)]

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